

REMARKS

This responds to the Office Action dated on January 3, 2008.

Claims 1 and 11 are amended; as a result, claims 1-3, 6, 11-13 and 16 are now pending in this application.

§102 Rejection of the Claims

Claims 1-3, 6, 11-13 and 16 were rejected under 35 U.S.C. § 102(e) for anticipation by Casavant (U.S. Publication No. 2004/0088015A1). The rejections are traversed and reconsideration is respectfully requested.

Applicant generally reiterates the remarks made in response to previous office actions and asserts that claims 1-3, 6, 11-13 and 16 are neither anticipated nor rendered obvious by Casavant. Independent claims 1 and 11 both recite limitations relating to the monitoring of respiratory activity via a thoracic impedance channel. Applicant finds no reference to measuring thoracic impedance in Casavant and believes that the claims are unanticipated under section 102 by Casavant for at least that reason. Claims 1 and 11 also recite that it is *spontaneous* respiratory activity that is being monitored. The term “spontaneous respiratory activity” is well understood to refer to respiration occurring without artificial stimulation. Applicant has requested amendment of independent claims 1 and 11 herein, however, to remove any ambiguity on this issue by reciting that it is “spontaneous respiratory activity occurring not as a result of diaphragmatic pacing” that is being monitored. The Casavant reference does not teach the monitoring of such activity

It is also Applicant’s position that the limitations of the pending claims regarding the detection of respiratory arrest after detection of ventricular fibrillation and while an output capacitor is charging are neither taught nor suggested by the technique of measuring blood oxygen saturation as taught by Casavant. As stated previously, the detection of the oxygen saturation or partial pressure in the blood during ventricular fibrillation is not indicative of respiratory activity. Applicant’s point is a simple one. While blood oxygen concentration may be reflective of respiratory activity under normal physiological circumstances, the pumping

action of the heart is so severely compromised during ventricular fibrillation that little or no blood flows through the pulmonary and systemic circulations. Since blood is not being oxygenated during ventricular fibrillation, blood oxygen concentration (and hence oxygen saturation and oxygen partial pressure) decreases whether or not air is moved in and out of the lungs. Applicant regards this to be self-evident from knowledge of basic physiology. If the Examiner still wishes to dispute the point, Applicant requests that the Examiner at least put forth some credible reasoning as to how blood can be oxygenated during ventricular fibrillation. Applicant's only purpose in submitting the Nagdyman reference was to serve as an example of a case where blood oxygen decreases at the onset of ventricular fibrillation even while the patient is being artificially ventilated as shown in Fig. 1. Applicant does not believe the other aspects of the article as commented upon by the Examiner are particularly relevant to the issue being discussed here. However, with reference to Fig. 1 of Nagdyman, Applicant would point out that the decrease in blood oxygen saturation after onset of the SVT and before initiation of CPR occurs even though the patient is not described as ever being in respiratory arrest. Applicant notes that the Examiner incorrectly asserts that the patient is in respiratory arrest. That is never stated in the article. CPR incorporating ventilation is routinely given to patients in cardiac arrest to augment their natural respiration. Applicant would also remind the Examiner that the CPR delivered to the patient as described in the Nagdyman article involves both ventilation and cardiac compressions, the latter causing some blood to be pumped even while the heart is fibrillating.

§103 Rejection of the Claims

Claims 1-3, 6, 11-13 and 16 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Scheiner (U.S. Patent No. 6,415,183) in view of Min (U.S. Patent No. 5,836,976). The rejections are traversed and reconsideration is respectfully requested.

Applicant generally reiterates the remarks made in response to previous office actions and asserts that claims 1-3, 6, 11-13 and 16 are not rendered obvious by Scheiner in view of Min. Applicant also has the following comments regarding the statements made in the Final Office Action with respect to Applicant's previous remarks that asserted the Min reference does not teach delivering diaphragmatic pacing during the ventricular refractory period after a ventricular

sense if respiratory arrest is detected subsequent to termination of ventricular fibrillation by a shock pulse. Applicant does not dispute that the device described in Min may deliver defibrillation shocks to terminate ventricular fibrillation. However, Min does not describe the delivery of diaphragmatic pacing in conjunction with anything but the delivery of cardioversion shocks, where the diaphragmatic pacing is delivered to synchronize the delivery of cardioversion shocks with the respiratory cycle. Applicant repeats that the Min reference does not discuss anything relating to the delivery of diaphragmatic pacing during the ventricular refractory period after a ventricular sense if respiratory arrest is detected subsequent to termination of ventricular fibrillation by a shock pulse as recited by claims 1-3, 6, 11-13 and 16.

CONCLUSION

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney (847) 432-7302 to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being filed using the USPTO's electronic filing system EFS-Web, and is addressed to: Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on this 3rd day of March 2008.

Kate Gannon

Name

Signature